CLAIMS

1. An ablative thermolysis reactor comprising:
   (i) a reaction vessel,
   (ii) an inlet into the reaction vessel for receiving feedstock,
   (iii) an outlet from the reaction vessel for discharging thermolysis product,
   (iv) within the reaction vessel, an ablative surface defining the periphery of a cylinder,
   (v) heating means arranged to heat said ablative surface to an elevated temperature, and
   (vi) at least one rotatable surface, the or each rotatable surface having an axis of rotation coincident with the longitudinal axis of said cylinder,

wherein the rotatable surface is positioned relative to the ablative surface such that feedstock is pressed between a part of the rotatable surface and said ablative surface and moved along the ablative surface by the rotatable surface, whereby to thermolyse said feedstock.

2. A reactor as claimed in claim 1, wherein the reaction vessel is bounded by an inner wall with the ablative surface being defined by an outwardly facing surface of said inner wall (i.e. convex ablative surface).

3. A reactor as claimed in claim 2, wherein the or each rotatable surface is mounted outwardly of the ablative surface and arranged to press feedstock toward the axis of rotation.

4. A reactor as claimed in claim 1, wherein the reaction vessel is bounded by an outer peripheral wall with the ablative surface being defined by an inwardly facing surface of said outer wall.

5. A reactor as claimed in claim 4, wherein the or each rotatable surface is mounted inwardly of the ablative surface and arranged to press feedstock away from the axis of rotation.

6. A reactor as claimed in any preceding claim, wherein said ablative surface has a circular or elliptical cross-section perpendicular to the axis of rotation of the or each rotatable surface.

7. A reactor as claimed in any preceding claim, wherein said at least one rotatable surface is in the form of a rotatable blade.

8. A reactor as claimed in any preceding claim, wherein said heating means is adapted to heat said ablative surface to a temperature in the range of from about 400°C to about 700°C.

9. A reactor as claimed in claim 7, wherein said heating means is arranged to heat the ablative surface by electrical heating, by the combustion of a solid, liquid or gaseous fuel, by condensation of a vapour, or by circulation of a hot fluid.

10. A reactor as claimed in any preceding claim, wherein means are provided to adjust the angle of the rotatable surface, or front surface of each blade when present, relative to the ablative surface.

11. A reactor as claimed in claim 10, wherein angle adjustment means are provided to adjust independently each rotatable surface or blade when present.

12. A reactor as claimed in any preceding claim, wherein means are provided to adjust the spacing between each rotatable surface and the ablative surface.

13. A reactor as claimed in any preceding claim, wherein the or each rotatable surface is resiliently biased toward the ablative surface.

14. A reactor as claimed in any preceding claim, wherein a plurality of rotatable surfaces are provided, the rotatable surfaces preferably being equi-angularly displaced about the axis of rotation.

15. A reactor as claimed in any preceding claim, wherein said reactor is provided with a continuous feed mechanism for supplying feedstock into said reaction vessel.